



Enzymatic Decontamination Systems

**Joseph DeFrank, Tu-chen Cheng, Steven Harvey,
Vipin Rastogi and Abe Turetsky**

Biotechnology Team

Edgewood Chemical Biological Center



Enzymatic Decontamination Systems

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OBJECTIVE: Development of catalytic enzymes that detoxify chemical and biological warfare agents and related hazardous materials.

APPLICATIONS:

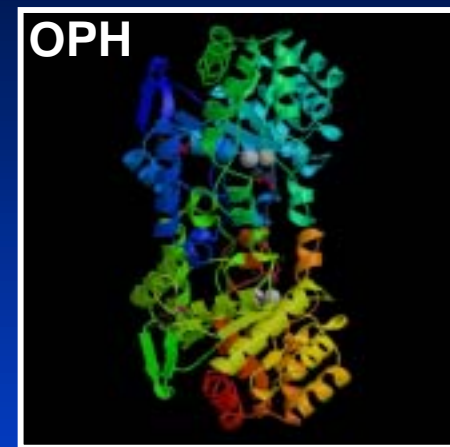
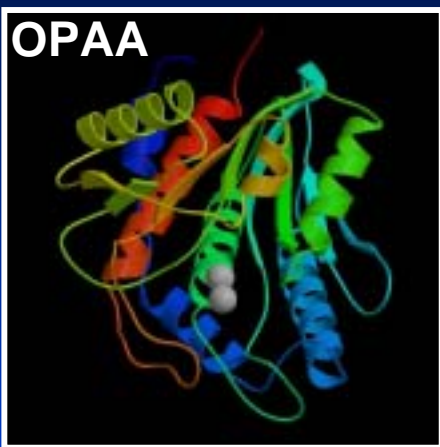
- Potential use in equipment, large-area, and personnel decontamination, active protection, prophylaxis and treatment.
- For both military and civilian first-responder use.
- Additional potential applications in detection, agricultural cleanup and remediation.



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CONCEPT



Multiple Enzymes



**Dry powder
or liquid
concentrate**



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ADVANTAGES:

- **Non-toxic, non-corrosive, non-flammable and environmentally safe.**
- **Multiple catalytic enzymes and several enzyme compatible materials incorporated – easily upgradeable by addition of new enzymes.**
- **To be added to any water-based application system (military or civilian) – dual use capabilities.**
- **Concentrated to provide low cost and reduced storage and logistical burdens.**



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CONCEPT OF OPERATIONS





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TECHNICAL STATUS:

- **Highly efficient enzymes developed for nerve agents (Sarin, Soman, VX) and numerous OP pesticides.**
- **Enzymes identified with activity against blister agent sulfur mustard as well as organochlorine pesticides.**
- **Enzymes against carbamate pesticides known.**
- **Enzymes, peptides/proteins and a variety of other natural products identified with activity against BW agents such as anthrax and plague.**
- **Demonstrated activity in wide variety of potential application systems (fire-fighting sprays and foams, aqueous degreasers).**



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COMMERCIALIZATION:

- **Production and distribution of several nerve-agent degrading enzymes to begin shortly under Patent License Agreements.**
- **Marketing of enzymes for decontamination applications to be handled through sub-license agreements.**
- **Applications in other areas being pursued – ex. agricultural/industrial cleanup, medical uses, etc.**
- **Potential new partnerships in R&D and/or marketing are welcome.**



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POINT OF CONTACT:

Dr. Joseph J. DeFrank

AMSSB-RRT-BT (Bldg. E-3150)

Aberdeen Proving Ground, MD 21010-5424

Tel: (410) 436-3740

Fax: (410) 436-8661

Email: joseph.defrank@us.army.mil